

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ALABAMA
NORTHEASTERN DIVISION**

**THE TRAVELERS INDEMNITY
COMPANY OF AMERICA, as
subrogee of PLUMTREE CENTER,**

Plaintiff,

vs.

BROAN-NUTONE, LLC,

Defendant.

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CASE NO. CV 05-B-1440-NE

MEMORANDUM OPINION

This case is currently before the court on plaintiff The Travelers Indemnity Company of America's ("Travelers") Motion in Limine to Preclude the Testimony of Gary Coggins as Expert Witness, (doc. 26),¹ and Motion in Limine to Preclude the Testimony of Bob E. Hallman as Expert Witness, (doc. 28). Travelers seeks to exclude the entire testimony of both Gary Coggins ("Coggins") and Bob E. Hallman ("Hallman"), defendant Broan-Nutone LLC's ("Broan") fire origin and fire causation experts, respectively, as inadmissible expert testimony under Rule 702 of the Federal Rules of Evidence. As an alternative to excluding all of Hallman's testimony, Travelers seeks to exclude all opinions for which Hallman is deemed unqualified to testify.

¹ Reference to a document number, ["Doc. ____"], refers to the number assigned to each document as it is filed in the court's record.

The subject of this case is a fire that occurred on September 1, 2003, in a store of a shopping center insured by Travelers. (Doc. 8 at ¶¶ 5–6; Doc. 9 at ¶¶ 5–6.) Travelers contends that the fire was caused by a bathroom ceiling exhaust fan manufactured by Broan. (*Id.* at ¶¶ 10–11.) The court previously granted summary judgment to Broan on Travelers’ breach of warranty claim and has denied summary judgment on Travelers’ negligence and Alabama Extended Manufacturers Liability Doctrine claims. (Doc. 36.)

Upon consideration of the record, the submissions of the parties, and the relevant law, the court is of the opinion that Travelers’ Motion in Limine to Preclude the Testimony of Gary Coggins as Expert Witness, (doc. 26), is due to be granted, and Travelers’ Motion in Limine to Preclude the Testimony of Bob E. Hallman as Expert Witness, (doc. 28), is due to be granted in part and denied in part.

I. LEGAL STANDARD

The admissibility of expert testimony is governed by Rule 702 of the Federal Rules of Evidence, which provides that expert testimony should be admitted “if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.” Fed. R. Evid. 702 (2000). This rule was amended to its present form as a result of the Supreme Court’s decision in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, which held that a trial court confronted with expert scientific testimony must determine “whether the expert is proposing to testify to

(1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue.” 509 U.S. 579, 592 (1993). The first of these issues is therefore a question of reliability, the second of relevance. *See id.* at 590–91. In this “preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue,” *id.* at 592–93, the court’s focus is “solely on principles and methodology, not on the conclusions that they generate,” *id.* at 595. As the *Daubert* court notes, “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Id.* at 596.

The court in *Daubert* identified the following non-exclusive factors for courts to use in determining whether a theory or technique is scientific knowledge that will assist the trier of fact: (1) whether the theory can and has been tested; (2) whether the theory has been subjected to peer review and publication; (3) the known or expected rate of error; and (4) the general acceptance of the theory in the relevant scientific community. *See id.* at 593–94. In *Kumho Tire Company, Ltd v. Carmichael*, the Supreme Court extended *Daubert*’s interpretation of Rule 702 to non-scientific expert testimony, *see* 526 U.S. 137, 149 (1999), and it also clarified that the *Daubert* factors do not constitute a definitive test, but “may or may not be pertinent in assessing reliability, depending on the nature of the

issue, the expert's particular expertise, and the subject of his testimony," *id.* at 150 (internal quotations omitted).

II. MOTION IN LIMINE TO PRECLUDE COGGINS'S TESTIMONY

A. Summary of Coggins's Testimony

Coggins's testimony consists of a report prepared "in anticipation of litigation" as well as a deposition conducted by Travelers' counsel. (Doc. 27-3, Coggins's Report; Doc. 41-2, Coggins Dep., Apr. 6, 2007.) Coggins is a fire investigator who was hired by Broan to examine the scene of the fire and to conduct an origin and cause investigation. (Doc. 27-3 at 2; Doc. 41-2 at 16:15–20.) Coggins investigated the fire scene on September 12, 2003, eleven days after the fire, and concluded in his first and apparently only written report on January 16, 2007, that the fire had originated "at or above the ceiling level" of the women's restroom, the front of two restrooms located in the rear of the store, and was most likely caused by an anomaly of one of the electrical components contained within the ceiling level area. (Doc. 27-3 at 5; Doc. 41-2 at 12:11–19, 24:16–18, 27:14–19.)

Coggins's opinion on the origin of the fire, the testimony challenged by this motion,² is solely based upon the fire patterns he observed: that the patterns of damage appeared to increase steadily from the floor level upwards and were more extensive in the

² Coggins admitted in his deposition that his opinion as to the *cause* of the fire was not conclusive, so it is therefore not a subject of this motion. (Doc. 41-2 at 42:6–44:4; Doc. 27-3 at 5.)

women's restroom than in the restroom in the back, the men's restroom. (Doc. 27-3 at 4; Doc. 41-2 at 27:20–28:7, 94:15–20, 96:6–103:19.) Coggins reported that, in both restrooms, the ceilings had collapsed, exposing items that had been stored above the restrooms and which Coggins believed fueled the fire. (Doc. 27-3 at 4; Doc. 41-2 at 47:12–48:12.) Notably, the switch controlling both the fan and the light in the women's restroom was in the “off” position at the time of the fire, while the switch in the men's restroom was in the “on” position, (*id.*; doc. 41-2 at 37:19–38:12); the fan that Travelers contends started the fire was located in the men's restroom, and therefore outside of Coggins's determined area of origin, (doc. 41-2 at 32:3–34:18).

In his deposition, Coggins claimed to have adhered to the scientific method, but in his report, he explained that he formulated his hypothesis that the fire originated over the women's restroom using his skills, knowledge, education, training, and experience, and that his hypothesis had “withstood all tests.” (Doc. 27-3 at 5; Doc. 41-2 at 29:14–16, 39:17–40:3.) Although Coggins admitted being unfamiliar with *National Fire Protection Association* (“NFPA”) 1033, a publication establishing the professional qualifications for fire investigators and “approved as an American National Standard,” he agreed with *NFPA 1033*'s requirement that fire investigators should follow the scientific method in drawing their conclusions. (Doc. 41-2 at 28:21–29:13; Doc. 27-7, *NFPA 1033*, at 1033-1, § 4.1.3.) Coggins stated in his report that he arrived at his theories “using factual and

witness information” and “tested [them] against all known data,” (doc. 27-3 at 5), but when asked to describe in more detail how he performed his tests, Coggins replied:

Just trying to take what data you have available and consider it as far as did – if it occurred here, what would have occurred. You know, try to imagine if it did start here, then what would the patterns look like as opposed to if it originated here. It’s just trying to logically work your way through it.

(Doc. 41-2 at 40:7–13.)

In reaching his conclusions, Coggins failed to obtain most of the information that he acknowledged was necessary for a complete and competent fire origin investigation, and that compose the types of fire origin evidence suggested for collection by another NFPA publication, *NFPA 921*,³ with which Coggins was admittedly familiar, (doc. 41-2 at 28:8–20, 110:22–111:9). First, Coggins spoke with only one witness, the store

³ *NFPA 921: Guide for Fire and Explosion Investigations* (2004 Ed.), has, like *NFPA 1033*, been “approved as an American National Standard.” (Doc. 40-3, *NFPA 921*, at 2.) It has also been recognized as a national fire investigation standard by at least two other courts. *See, e.g., Workman v. AB Electrolux Corp.*, No. 03-4195, 2005 WL 1896246, at *10 (D. Kan. Aug. 8, 2005) (“... NFPA 921 ... represents the national standard with regard to appropriate methodology for investigation by fire science experts.”); *McCoy v. Whirlpool Corp.*, 214 F.R.D. 646, 653 (D. Kan. 2003) (“The ‘gold standard’ for fire investigations is codified in NFPA 921, and its testing methodologies are well known in the fire investigation community and familiar to the courts.”). *NFPA 921* proposes a six-step methodology for conducting a fire investigation based on the scientific method: (1) recognize the need; (2) define the problem; (3) collect data; (4) analyze the data; (5) develop a hypothesis; and (6) test the hypothesis. (Doc. 40-3 at § 4.3); *see also McCoy*, 214 F.R.D. at 650–51. *NFPA 921* further specifies that the determination of the origin of a fire frequently involves the coordination of information from the following sources: fire patterns; witness statements; analysis of the physics and chemistry of fire initiation, development, and growth; and noting the electrical circuit involved and the location where electrical arcing has caused damage. (*Id.* at § 17.1.1.)

manager, who was present during Coggins's investigation.⁴ (Doc. 41-2 at 94:15–20, 124:3–8.) He did not collect any additional witness statements, such as one from Lieutenant Steve Shelton (“Lt. Shelton”), the city fire investigator who was at the scene immediately after the fire and who concluded that the fire had originated from the fan or wiring going to the fan in the bathroom ceiling. (Doc. 41-2 at 34:19–35:21; Doc. 27-2, Lt. Shelton's Report.) Second, Coggins never searched for or asked to see any electrical evidence, such as faulty wiring, that was the purported ignition source in his determined area of origin. (Doc. 41-2 at 77:2–18, 78:19–21.) Third, although Coggins stated that he was not qualified to perform “arc mapping,”⁵ Coggins did not attempt to obtain any arc mapping evidence and was apparently unaware that one of Travelers' experts claimed to have performed this technique. (*Id.* at 84:10–14, 85:11–15.)

Finally, Coggins conceded in his deposition that the area of heaviest burn is not necessarily the area of origin. Responding to a hypothetical, Coggins acknowledged that if, for example, a fire was set by a t-shirt in one corner of a room while a gasoline can

⁴ In fact, the store manager, Mr. Whitlock, told Coggins that the bathroom fans were “slow to get up to speed,” but Coggins considered that evidence irrelevant. (Doc. 41-2 at 116:6–18.) Coggins admitted during his deposition that this statement might indicate a problem with the fan that, given its location near his hypothesized area of origin, a prudent fire investigator would investigate. (*Id.* at 116:21–117:6.)

⁵ “Arc mapping” is defined by Travelers in its brief as another term for the final type of fire origin evidence mentioned by *NFPA 921*, determining the electrical circuit involved and the location where electrical arcing has caused damage. (Doc. 27-1 at 4.) In his deposition, Coggins appears to agree with this definition and also affirms that arc mapping evidence, if available, should be obtained in any fire investigation. (Doc. 41-2 at 78:1–18, 84:4–12.)

stood in the other corner, the location surrounding the gasoline can would produce a heavier fire pattern even though it was not the fire's area of origin. (*Id.* at 121:2–122:5.)

B. Analysis

Coggins essentially proposes the following theory for his opinion that the fire originated in the women's restroom: the area of greatest fire damage is the area of origin. Travelers does not appear to dispute Coggins's qualifications, or that the women's restroom had greater fire damage than the men's, but it does dispute the validity of Coggins's underlying theory and thus the admissibility of Coggins's testimony. Travelers contends that Coggins's testimony should be excluded as inadmissible under Rule 702 because his theory fails under all three prongs of the rule: (1) it is not based on sufficient facts or data; (2) it is not based on reliable principles or methods; and (3) Coggins did not apply the principles and methods reliably to the facts of the case. (Doc. 27-1 at 1.) Broan counters that Coggins's testimony should be admitted because it is appropriately based on his education and experience, and because all of Travelers' arguments should go to the weight, not the admissibility, of the testimony. (Doc. 41 at 11.) The court addresses the three elements of Rule 702 in turn and then assesses the *Daubert* factors, to the extent that they are relevant. As a preliminary matter, the court notes that Coggins's testimony that the fire originated in the women's restroom is relevant because it will assist the trier of fact in determining the fire's origin, a fact in issue in this case.

1. Reliability

a. Sufficient Facts or Data

Coggins's testimony is based upon his observations that the women's restroom sustained greater damage than the men's. In the advisory committee's notes to the 2000 amendments to Rule 702, the advisory committee qualifies that "'sufficient facts or data' is not intended to authorize a trial court to exclude an expert's testimony on the ground that the court believes one version of the facts and not the other." Fed. R. Evid. 702 advisory committee's note. Thus, the court's inquiry for this section of the rule is limited merely to whether the expert's opinion is supported by sufficient, but not necessarily all, facts. *See Allstate Ins. Co. v. Hugh Cole Builder, Inc.*, 137 F. Supp. 2d 1283, 1290 (M.D. Ala. 2001) (finding sufficient facts to support a fire expert's causation opinion, even though the evidence was circumstantial and there was contrary circumstantial evidence potentially undermining the expert's opinion).

While Coggins admitted that there was likely relevant information missing from his investigation and gave excuses for his failure to obtain this evidence,⁶ Broan is not required to show that Coggins obtained all material facts and data, but only that Coggins had a sufficient evidentiary foundation for his opinion. Because Coggins's theory was restricted to fire patterns, a theory that the court finds inherently unreliable for the reasons

⁶ In his deposition, Coggins stated that he did not know whether he had tried to call Lt. Shelton, (doc. 41-2 at 34:19–35:10), that he was never given the opportunity to look at any of the electrical wiring, (*id.* at 77:11–18), and that he did not know that any arc mapping had been performed, (*id.* at 84:15–88:11).

discussed below, Coggins's circumstantial evidence of fire damage does support his theory, but it does not constitute the kind of sufficient evidentiary foundation supporting a *reliable* methodology that is required for an admissible expert opinion.

b. Reliable Principles and Methods

Coggins purportedly used the scientific method to reach his opinion that the fire originated in the women's restroom. Certainly, the court finds the scientific method itself, creating a hypothesis and testing that hypothesis, to be a reliable methodology, but Coggins's testimony does not demonstrate that he used the scientific method, or, for that matter, any other reliable methodology. Indeed, even Broan does not argue that Coggins's opinions were reached using the scientific method; instead, Broan contends that Coggins's testimony is based on his education and experience. While Rule 702 does not preclude an expert from basing his opinion on experience, an expert who relies solely or primarily on experience must establish how that experience leads to the conclusion reached, why that experience is a sufficient basis for his opinion, and how that experience is reliably applied to the facts. *See* Fed. R. Evid. 702 advisory committee's note; *Allstate*, 137 F. Supp. 2d at 1291. Since Broan has not shown from Coggins's report and deposition testimony how Coggins's experience clearly led him to his conclusions, or alternatively has not shown that Coggins's methodology is consistent with the scientific method prescribed by the national standards for fire investigators, the court cannot find that Coggins's testimony is the product of reliable principles and methods.

In its brief, Broan inaccurately compares Coggins's testimony to that of the fire expert in *Allstate Insurance Company v. Hugh Cole Builder, Incorporated* to argue that Coggins's testimony should be admitted. In *Allstate*, the admitted testimony was, in part, based on the expert's education and experience, but it was also based on discussions the expert had with other experts and on information in *NFPA 921* that supported the expert's theory. *See Allstate*, 137 F.Supp.2d at 1289, 1291 (noting that the discussion of conductivity in the *NFPA 921* was an "especially" important factor to the court's admissibility ruling, and that the expert had made "his reasoning processes and data sources sufficiently transparent" to allow a thorough cross-examination). Coggins, by contrast, concedes that the formation and testing of his hypothesis was based *solely* on his skills, knowledge, education, training, and experience, and he offers no rationale or external support for the reliability of his conclusions, not even a statement that, based on his experience, the area of greatest fire damage is, on its own, a reliable predictor of the area of origin.

Coggins further undermines any reliability his methodology might have by acknowledging that *NFPA 1033* and *921*, while not mandatory standards, require the use of the scientific method and rely upon more than mere fire patterns to produce a reliable fire origin hypothesis. *See Fireman's Fund Ins. Co. v. Canon U.S.A.*, 394 F.3d 1054, 1059 (8th Cir. 2005) (holding that a district court did not abuse its discretion when it refused to admit testimony that did not adhere to the requirements of *NFPA 921*);

Workman, No. 03-4195, 2005 WL 1896246, at *10 (finding testimony reliable that was explicitly based on NFPA standards); *cf. McCoy v. Whirlpool*, 214 F.R.D. 646, 651 (D. Kan. 2003) (rejecting an argument that expert fire science testimony must specifically reference *NFPA 921* to be admitted, but comparing the expert's methodologies and analysis with *NFPA 921* to conclude that the expert's methods were "good enough to survive plaintiff's superficial and conclusory attack"). Given that courts recognize the NFPA publications as setting forth one particular reliable methodology for fire investigators, and given the absence of any alternative reliable methodology proposed by Coggins himself, the court will compare Coggins's actual methods with those in the NFPA publications to help determine whether Coggins did have, in substance if not in form, a reliable methodology.

As mentioned above, Coggins's fire pattern evidence is just one type of fire origin evidence suggested for collection by *NFPA 921*. Likewise, *NFPA 921* recommends a certain procedure for conducting a fire origin investigation that includes not only an in-depth examination of the fire scene, as Coggins completed, but also a fire scene reconstruction and the development of a fire-spread scenario, neither of which is mentioned in Coggins's testimony. (Doc. 40-3 at § 17.1.6.) Interestingly, *NFPA 921* advises investigators to begin their examinations at the area of least damage and proceed to the area of greatest damage, to "avoid forming conclusions about the origin," (*id.* at § 17.1.5); however, there is no indication that Coggins examined the fire damage in this

kind of systematic fashion. Coggins also performed no actual testing of his hypothesis that the fire patterns were conclusive, but only considered alternative scenarios in his mind. While Coggins did not have to eliminate all other possible areas of origin, he did, under the NFPA methods, have to demonstrate that he excluded “[a]ll other reasonable origins.” *See Bryte ex rel. Bryte v. Am. Household, Inc.*, 429 F.3d 469,478 (4th Cir. 2005) (affirming the exclusion of fire causation testimony that did not follow NFPA standards in assessing and refuting other reasonable origins and causes). Because Coggins never clearly discussed and ruled out other reasonable origins, Coggins’s testimony is not simply “shaky but admissible,” but is devoid of any reliable methodology.

Broan argues that one particular sentence in *NFPA 921*, which states that a single item of evidence can sometimes be the basis of a conclusive origin determination, (doc. 40-3 at § 17.1.2), is evidence that Coggins did follow the NFPA standards and based his conclusions on a reliable methodology. Coggins admits, however, that his single item of evidence, the fire burn patterns, does not necessarily indicate the area of origin, so Broan cannot maintain that this evidence forms the basis of a *conclusive* origin determination. In addition, Broan does not address the remainder of the section of *NFPA 921* from which it cites, which clearly labels investigations based on a single piece of evidence as the exception, rather than the rule, and which also clarifies that where there is no single conclusive item of evidence, “[t]he investigator should then use all of the available resources in developing potential scenarios and determining which scenarios plausibly fit

all of the evidence available.” (*Id.*) Coggins did not use all of his available resources or develop different potential scenarios for the fire’s origin, instead speculating only from the amount of damage that the women’s restroom must have been the point of origin. Because Broan has not shown that Coggins based his testimony on a reliable experience-based method, or on the kind of methods outlined in the NFPA publications and held reliable by several other courts, Broan has not met the second, necessary element of Rule 702 to render Coggins’s testimony admissible.

c. Application of Principles and Methods to Facts

Even if Coggins’s experience-based methods were reliable, Coggins does not establish that he applied his experience reliably to the specific facts of this case, primarily because he does not adequately discuss how he used his experience to reach his conclusions. Although the court must and does focus on Coggins’s methodology, and not his conclusions, the Supreme Court has pragmatically recognized that “conclusions and methodology are not entirely distinct from one another.” *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997). To that end, while an expert is permitted to extrapolate conclusions from data, “nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.” *Id.* Presented only with Coggins’s undisputed qualifications and a relatively bare statement of his conclusions, the court is confronted

with an analytical gap that is too great for the court to conclude that Coggins applied his methodology reliably to the facts of the case.

d. *Daubert* Factors

As a consistent, but not dispositive, reason for excluding Coggins's testimony on reliability grounds, his fire origin opinion fails to meet most of the *Daubert* factors. In particular, there is no evidence that Coggins's methodology of relying on fire pattern evidence alone has been subjected to peer review, that it has a known or expected rate of error, or that it has gained "general acceptance" in the fire science community. Certainly, fire patterns are one type of evidence described in *NFPA 921* as relevant to fire origin, but Broan has not cited to, nor has the court found, any authority that has accepted fire pattern evidence as singularly conclusive of fire origin. *See Weisgram v. Marley Co.*, 169 F.3d 514, 519 (8th Cir. 1999) (holding an expert qualified to testify as to the origin of a fire based on "the burn and smoke patterns and *other physical evidence*") (emphasis added); *Allstate*, 137 F.Supp.2d at 1288 (finding a fire expert's theory subject to peer review and generally accepted in the scientific community because it was based on *NFPA 921*). The only *Daubert* factor that Coggins's testimony might be capable of meeting is that of testability, since his theory that fire patterns are solely determinative of fire origin is likely a testable proposition. This factor alone, however, does not overcome the general unreliability of Coggins's testimony. Because Broan has failed to show that Coggins's

testimony is reliable within the meaning of Rule 702 and *Daubert*, the court excludes all of Coggins's testimony.

III. MOTION IN LIMINE TO PRECLUDE HALLMAN'S TESTIMONY

A. Summary of Hallman's Testimony

Hallman's testimony, as presented to the court for this motion, is limited to his deposition; in his deposition, Hallman references a report dated February 5, 2007, but that report is not provided to the court by either party for its consideration. (Doc. 41-3, Hallman Dep., Feb. 23, 2007, at 17:14–7.) Hallman is a licensed electrical engineer who was hired by Broan in January 2007 to determine the cause of the fire, as well as to analyze the allegation by Travelers that the Broan fan in the men's restroom caused the fire. (*Id.* at 7:2–9, 12:14–16.) Hallman has participated in around 200 fire investigations during his career, and he has been involved in eight cases in which Broan bathroom exhaust fans were alleged to have caused a fire. (*Id.* at 7:2–17, 73:5–9). In the instant case, Hallman personally examined the specific fan alleged to have caused the fire, once it had been taken to Travelers' laboratory, and he also inspected wiring extracted from above the bathroom area. (*Id.* at 17:5–8; 28:7–9.)

Hallman's testimony includes four opinions: 1) the Broan fan in the men's restroom did not cause the fire; 2) the arcing of the fan in the men's restroom was a consequence, and not a cause, of the fire; 3) the branch circuit wiring installed above the women's restroom caused the fire; 4) the opinions offered by Travelers' expert, Mr. John

Machnicki (“Machnicki”), are inaccurate in their assessment of the cause of the fire. (*Id.* at 17:18–18:7.) With respect to Hallman’s first and second opinions, Hallman reached these conclusions in part because Coggins had previously determined that the fire originated in the women’s restroom, while the Broan fan was located in the men’s restroom, and in part because there was evidence of arcing and short circuit current flow on the wires extracted from the Broan fan that were not consistent with starting a fire. (*Id.* at 27:23–28:16; 32:14–35:25.) Hallman’s third opinion, his personal conclusion of the cause of the fire, again relied on Coggins’s origin opinion to isolate the area in which Hallman searched for possible causes, and also relied upon evidence of arcing and short circuit flow on the branch circuit wiring extracted from above the restroom area. (*Id.* at 36:1–15.) Finally, Hallman’s critique of Machnicki’s testimony was based upon Hallman’s determination that Machnicki failed to recognize evidence of actual arcing and short circuit current flow on the branch circuit conductors, as Hallman did, and that Machnicki had improperly ruled out “fire attack,” or the idea that elevated temperatures from an approaching fire caused the motor windings on the fan to fail, as the reason for the arcing and short circuit current flow on the windings. (*Id.* at 40:1–42:16.) In addition, Hallman criticized Machnicki’s reliance on an alloy theory to explain away the apparent evidence of arcing and short circuiting on the branch circuit conductors. (*Id.* at 40:7–11, 42:17–43:2.)

When asked whether he had created hypotheses and tested those hypotheses, or, in other words, performed the scientific method, Hallman maintained that he had adhered to a systematic approach and based his conclusions “on engineering principles of examining physical evidence and establishing a cause from an engineering standpoint,” even though he did not literally write down a hypothesis and test it. (*Id.* at 20:3–18.) Indeed, Hallman explained that his opinions were informed by tests performed in conjunction with another case for Broan to determine whether the motor windings in the Broan fans would fail in response to extreme heat, as if from an approaching fire, thus causing the circuit conductors providing power to the fan to fail. (*Id.* at 21:1–26:1.)

B. Analysis

Travelers objects not only to the reliability of Hallman’s testimony, for lack of a reliable methodology and failure to meet the *Daubert* factors, but also to Hallman’s expert qualifications, claiming that as an electrical engineer, Hallman is not an expert in fire science and is not qualified to render an opinion on fire causation or on the accuracy of the opinions reached by other fire experts. (Doc. 29-1.) Travelers does not contest the relevancy of Hallman’s opinion, and the court finds that, assuming Hallman is qualified to render an opinion on fire causation, his testimony is relevant to a fact in issue.

1. Hallman’s Expert Qualifications

Hallman does not claim to be a fire science expert or even a fire investigator, but only an electrical engineer offering opinions on the potential and actual *electrical* causes

of the fire. The court has reviewed the cases cited by Travelers in which a purported expert was deemed unqualified to testify as to fire causation, but the court finds that to the extent these cases excluded the expert's testimony for lack of the necessary qualifications, Hallman, who presented specific electrical causation findings that he attested were to a reasonable degree of scientific certainty, is distinguishable from the experts in the referenced cases. *See Cook v. Sunbeam Products, Inc.*, 365 F. Supp. 2d 1189, 1192 (N.D. Ala. 2005) (excluding testimony where the expert admitted he was unqualified and incapable of rendering an opinion on fire causation and where the opinion was also found unreliable); *Kozar v. Sharp Electronics Corp.*, No. 04-901, 2005 WL 2456227, at *2 (W.D. Pa. Sept. 30, 2005) (similarly excluding an expert who was admittedly unqualified and who could not give an opinion to a reasonable degree of engineering certainty); *Shelter Ins. Co. v. Ford Motor Co.*, No. 03-150, 2006 WL 318821, at *4 (N.D. Miss. Feb. 9, 2006) (holding an automotive inspector unqualified to testify to the cause of a vehicle fire when the alleged cause was a defective switch). The court also notes that it has previously admitted expert testimony on fire causation in this case from Travelers' expert, Machnicki, who is apparently a chemist, and not an expert in fire science,⁷ so the court

⁷ Broan has twice represented to the court that Machnicki is a chemist, (doc. 24-2 at 1; doc. 41 at 14), but the court cannot locate any testimony by Machnicki himself that describes his education and experience in chemistry. Since Travelers has not disputed this characterization of Machnicki's background, and also has not contended that Machnicki is an expert in fire science, the court assumes that Machnicki is a chemist and is not an expert in fire science. Even if Machnicki were a fire science expert, however, that fact would not change the court's finding that Hallman does not have to be a fire science expert to be qualified to testify to fire causation.

follows its own precedent in concluding that education and experience in fire science is not necessarily required to render an opinion on fire causation, as long as the opinions provided relate to the expert's area of expertise and are formulated to a reasonable degree of scientific certainty. Hallman, as an electrical engineer, has the requisite knowledge, skill, experience, training, and education to testify as an expert on electrical issues relating to the fire, and since all of his opinions involve potential electrical causes, the court finds him qualified to testify to these opinions.

2. Reliability

In assessing the reliability of Hallman's testimony, the court makes a distinction between the first three of Hallman's opinions, which are partially based on Coggins's testimony, and the fourth opinion, which Hallman has rendered based on his own experience, education, and examination of the physical evidence. The first three opinions are unreliable not for the reason chiefly argued by Travelers, that Hallman failed to follow a reliable methodology, but because Hallman's opinions were not based on sufficient facts and data and because Hallman did not apply his methods reliably to the facts of the case. Hallman, unlike Coggins, adequately explained that he used an approach similar to the scientific method in which he recognized problems, gathered data, and analyzed data according to engineering principles, an analysis he reviewed at length in his deposition. Although Hallman admitted that he did not specifically write down a hypothesis and test it, he did cite his involvement in testing of fans exposed to extreme heat and explained

how those tests were relevant to his opinions in this case. Of course, the court takes no position as to the accuracy of Hallman's conclusions, but Hallman's methodology demonstrates sufficient consideration of hypotheses and data that the court finds it substantially similar to the scientific method, a clearly reliable methodology under Rule 702 and *Daubert*.

Since, however, Hallman acknowledged that his first three opinions were based on Coggins's testimony defining the area of the fire's origin as the women's restroom only, Hallman admittedly did not consider possible ignition sources in the men's restroom and thus did not have sufficient facts to conclude that the fire's cause was above the women's restroom. In fact, it appears that Hallman had no reason to reach the narrow finding that the fire originated over the women's restroom, rather than above the restroom area more generally, except for the influence of Coggins's origin determination. The court's exclusion of Coggins's testimony does not, by itself, render Hallman's testimony inadmissible, since expert testimony based on inadmissible facts or data can be admitted as long as the facts or data are "of a type reasonably relied on by experts in the particular field forming opinions or inferences upon the subject." Fed. R. Evid. 703. Broan has not demonstrated, though, that Coggins's testimony, which is unsubstantiated by any reliable methodology, is a type of data reasonably relied upon by experts in the field; if anything, insofar as *NFPA 921* and *NFPA 1033* illustrate the reasonable expectations of fire causation experts, only opinions that themselves adhere to the scientific method can

provide the basis for further opinions. Because Coggins's testimony is not data that would be reasonably relied upon by experts in the field, and because Hallman omitted from his consideration all causation evidence from the men's restroom, Hallman's first three opinions about the causes (and non-causes) of the fire are not based on sufficient facts or data. Furthermore, because Hallman ignored pertinent data from the men's restroom as being outside the pre-determined area of origin, Hallman did not apply his systematic approach in a reliable way to all the facts of the case. As a result, Hallman's testimony regarding his first three opinions must be excluded under Rule 702.

Hallman's opinion about Machinski's testimony, on the other hand, is admissible because it is not based upon Coggins's origin determination and because it meets the three requirements of Rule 702. Hallman essentially faults Machnicki for not recognizing the arcing and short circuiting of the branch circuit conductors as a potential cause of the fire, for improperly dismissing those issues as a result of alloying, and for ruling out fire attack as the reason for the fan motor's failure. Hallman bases this critique of Machnicki's expert opinions on Hallman's personal inspection of the fan alleged to have caused the fire, which had been taken to Travelers' laboratory, as well as the extracted bathroom wiring, so Hallman has sufficient data to reach this disagreement with Machnicki. Moreover, as explained above, all of Hallman's opinions were based on a systematic approach, which the court finds akin to the scientific method and therefore a reliable methodology. Even if Hallman's opinion were based only on experience, he

nevertheless employed reliable principles because he clearly explained how his experience, particularly his participation in tests in which elevated temperatures caused the failure of fan motor windings, led him to his conclusions. Finally, Hallman applied his methods reliably to the facts underlying this opinion, identifying the physical data supporting his hypothesis and demonstrating how the evidence he collected refuted Machnicki's theories.

Consequently, Hallman's fourth and final opinion, limited strictly to his assessment of the accuracy of Machnicki's testimony, is sufficiently reliable under Rule 702 and *Daubert* to be admitted. Hallman's other opinions, asserting Hallman's own conclusions about the contribution of the fan or its arcing to the fire, as well as his personal determination of the cause of the fire as faulty wiring above the women's restroom, are not reliable and are inadmissible.

IV. CONCLUSION

Coggins's expert testimony, while relevant, is not reliable because it does not follow a reliable methodology or apply that methodology reliably to the facts of the case. Hallman, who is qualified to render expert opinions on fire causation with respect to electrical causes, only offers one opinion that is both relevant and reliable, and thus admissible: that Travelers' expert, Machnicki, inaccurately determined the cause of the fire because Machnicki 1) failed to recognize evidence that arcing and short circuit current flow on the branch circuit conductors might have caused the fire; 2) incorrectly

explained the evidence from the branch circuit conductors using an alloy theory; and 3) mistakenly ruled out fire attack as the reason for the fan motor's failure.

For the foregoing reasons, the court is of the opinion that Travelers' Motion in Limine to Preclude the Testimony of Gary Coggins as Expert Witness is due to be granted, (doc. 26), and Travelers' Motion in Limine to Preclude the Testimony of Bob E. Hallman as Expert Witness, (doc. 28), is due to be granted in part and denied in part. An order will be entered contemporaneously with this Memorandum Opinion.

DONE, this 26th day of March, 2008.

A handwritten signature in black ink, reading "Sharon Lovelace Blackburn". The signature is written in a cursive, flowing style. Below the signature is a horizontal line.

SHARON LOVELACE BLACKBURN
CHIEF UNITED STATES DISTRICT JUDGE